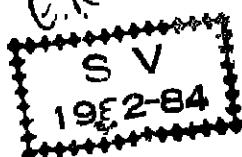


NATIONAL COUNCIL
OF
EDUCATIONAL RESEARCH AND TRAINING PROJECT
for further expansion and testing of the cognate method
of teaching Dravidian languages

R-ERIC

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DEPARTMENT OF LINGUISTICS, UNIVERSITY OF KERALA, KARIYAVATTOM
TRIVANDRUM

P H O N O L O G Y O F M A L A Y A L A M

B A S E D O N
 = = = = = = =

T H E N E W S P A P E R
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K E R A L A K A U M U D I
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D A T E D . 22 - 6 - 1973.
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V. R. PILLAI

SR. FELLOW.

NCERT PROJECT.

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C O N T E N T S
= = = x = = x =

INTRODUCTION

Inventory of Phonemes Vowels

Consonants.

Classification of Vowels

Classification of Consonants

Examples of Contrast

Vowels

Consonants

Distribution of allophones.

Vowels

Consonants

Syllabic structure

An experimental study of the Patterns of Consonant Clusters

Clusters (General)

Phonotactics

Distribution of Vowels

Distribution of Consonants

A PHONEMIC OUTLINE OF THE LANGUAGE IN THE MALAYALAN NEWSPAPER

"KERALA KAUMUDI". DATED. 22 - 6 - 1973.

The purpose of the Present analysis is to Produce an outline of the Phonology of Malayalam as gleaned from the Newspaper dialect.

The analysis is based on the Index Consisting of more than 4300 word items with a total frequency of 14000/ words, prepared from the above newspaper.

Since this analysis is oriented from the written representation of the language the narrow phonetic transcription is not intended. However I have made use of the earlier transcriptional system followed in the Department of Linguistics to identify the phonetic realization of the graphemes.

There are 49 graphic units found in the newspaper language - 12 for vowels and 37 for consonants.

Of 12 vowels the long vowels and diphthongs (ai and au) are taken as clusters of identical and non-identical vowels. Thus we get five writing units of vowel phonemes.

After delimitation the phonemes posited are 42 in number i.e., 5 vowels and 37 consonants.

An onglide ɥ- can be noticed in high front and mid-front vocoids when pronounced. Similarly an onglide ɯ- can be identified with the high back and mid back vocoids. Since it is the general Characteristic of the language it is not treated with individual instances.

INVENTORY OF PHONEMES

Segmental Phonemes

VOWELS :

i	u
e	o
a	

C O N S O N A N T S :

p	b	t	d	R	ṭ	ḍ	o	j	k	g
ph	bh	th	dh		tḥ	dḥ	ch	jh	kh	gh
	m		<u>n</u>		n	<u>ṇ</u>		<u>n̄</u>		ɳ
					l	<u>ḷ</u>		<u>l̄</u>		
					r					
					s	<u>ṣ</u>		<u>s̄</u>	h	
v								y		

C L A S S I F I C A T I O N O F V O W E L S

	front	Central	Back
High	i		u
Mid	e		o
Low		a	

	Bilabial	Labbio Dental	Dental	Alveolar	Retroflex	Palatal	Velar
Stops	p b	t d	k g				
Aspirated Stops	ph bh	th dh	kh gh				
Nasals	m	n̄ ñ	ŋ				
Laterals				l	ɭ	ʎ	
Flap				r			
Fricatives		s	ʃ	ʂ	ç	x	
Continuants	v				y		w

CLASSIFICATION OF CONSONANTS

MANNER OF ARTICULATION :

	Voiceless	Voiced	Total
Stops	11	10	21
Nasals	..	6	6
Laterals	..	3	3
Flap	..	1	1
Fricatives	4	..	4
Continuents	..	2	2
Total	15	22	37

POSITION OF ARTICULATION

	Voiceless	Voiced	Total
Bilabial	2	3	5
Labio-dental	..	1	1
Dental	2	3	5
Alveolar	2	3	5
Retroflex	3	4	7
Palatal	3	5	8
Velar	3	3	6
Total	15	22	37

EXAMPLES OF CONTRAST
=====

VOWELS

SHORT VOWELS

WORD INITIAL

	e	a	o	u
i	x	x	x	x
e		x	x	x
a			x	x
o				x

eg.

/ i e a o /

/innu/

'to day'

/ennu/

'which day'

/aannu/

'on that day'

/onnu/

'one'

/ i e a u /

/iri/

'sit (you, sg)'

/*eri/

'burning'

/ari/

'rice'

/*uri/

'a measure'

/ o u /

/oppu/

'signature'

/*uppu/

'salt'

W O R D M E D I A L

	a	a	o	u
i	x	x	x	x
e		x	x	x
a			x	x
o				x

Eg. / i e a o u /

/kitṭṭi/	'got'
/ketṭṭi/	'tied'
*/katṭṭi/	'thickness'
*/kotṭṭi/	'knowked'
/kutṭṭi/	'Child'

W O R D F I N A L

	e	a	o	u
i	x	x		x
e		x		x
a				x
o				

Eg. / i e a u /

/vaṛi/	'row'
/vaṛe/	'till'
/*vaṛa/	'line'
/*taṛu/	'tree'

SHORT VOWEL VS LONG VOWEL

WORD INITIAL

	ɪ	ee	aa	oo	uu
ɪ	x				
e		x			
a			x		
o				x	
u					x

Eg.

/ɪ ɪɪ/

/ɪtu/

'to put'

/ɪɪtu/

'mortgage : secutiry'

/e ee/

/etu/

'to take'

/*eetu/

'folio : sheet'

/a aa/

/ati/

'food'

/aati/

'swing'

/o oo/

/oti/

'to break'

/ooti/

'ran'

/u uu/

/*uma/

'Goddess Parvathi'

/*uuma/

'dumb one'

WORD MEDIAL

	ii	ee	aa	oo	uu
i	x				
e		x			
a			x		
o				x	
u					x

/i ii/

/vitu/ 'to release'

/viitu/ 'house'

/e ee/

/petta/ 'pair' : 'that which envolved'

/peetta/ 'place name'

/a aa/

/patram/ 'newspaper'

/paatram/ 'vessel'

/o oo/

/koccine/ 'child (o o)

/kooccine/ 'coach' (foot-ball) oo)

/u uu/

/kuti/ 'house'

/kuuti/ 'increased'

	WORD	FINAL
	ii	ee oo aa uu
i	x	
e		x
a		
o		x
u		x

Eg.

/i ii/

man_i 'bell'

*man_ii 'personal name' (VO)

/e ee/

makal_e 'daughter' (oo)

*makal_eee daughter (voo)

/a aa/

aaka 'to be : become'

aakaa 'not to be : not to become'

/u uu/

*aatu sheep

aa[~]tuu 'please swing or dance'

LONG VOWELS
WORD INITIALS

	ee	aa	oo	uu
ii	x			
ee		x		
'aa			x	
oo				x

Eg.

/ii ee oo uu /

/iitu/	'security'
/*eetu/	'folio'
/*aatu/	'sheep'
/ootu/	'tile'
*/uutu/	'woof' : 'narrow'

word medial

	ee	aa	oo	uu
66				
ii	x	x	x	x
ee		x	x	x
aa			x	x
oo				x

Eg. /ii ee aa oo uu/

*kiiṭam	'worm' : 'vermes'
keetṭu	'defect' : 'daṅge' ^{ma}
kaatṭu	'forest'
kootṭi	'crore'
*kuutṭu	'nest'

WORD FINAL
=====

	ee	aa	oo	uu
ii	x	x	x	x
ee		x	x	x
aa			x	x
oo				x

Eg. /ee ii aa oo uu /

/vaatṭii/	'come on!' (a term used to call for inferior girls or woman)
/vaataa/	'come on!' (a term used to call for inferior boys or men)
/paatoo/	'difficulty!' (emp)
/paatṭee/	'wholly'
/paatuu/	'Please sing!'

EXAMPLES OF CONTRAST

/p, ph/	
/pala/	'many'
/phalam/	'result'
/p, b/	
/pattu/	'ten'
/baṭṭa/	'allowance'
/p, bh/	
/paasa/	'personal name'
/bhaasa/	'language'
/p, t/	
/pala/	'many'
/tala/	'head'
/p, th/	
/kappal/	'ship'
/katha/	'story'
/p, d/	
/paanuur/	'place name'
/daanam/	'gift'
/p, dh/	
/panam/	'money'
/dhanam/	'wealth'
/P, R/	
/paatttu/	'song'
/Raatttu/	'wheel'
/p, ṭ/	
/pikkaRRu/	'picket'
/ṭikkaRRu/	'ticket'
/p, tḥ/	
*/paapam/	'sin'
/ paatham/	'lesson'

/p,d/	
/pattu/	'tén'
/dattu/	'death'
/p,dh/	
*/ruudham/	'rooted'
/ruupam̐/	'figure : form'
/p,c/	
/piri/	'twist'
/ciri/	'laughter'
/p,ch/	
/patram/	'newspaper'
*/chatram/	'umbrella'
/p,j/	
/paati/	'half'
/jaati/	'caste'
/p,jh/	
/pala/	'many'
*/jhala/	'girl : daughter'
/p,k/	
/pala/	'many'
/kala/	'art'
/p,kh/	
*/paati/	'half'
/khaadi/	'khadi'
/p,g/	
/panam/	'money'
/ganam/	'multitude'
/p,gh/	
*/paṭṭam/	'kite'
/ghaṭṭam/	'stage'
/p,m/	
/paṭi/	'entrance : step'

/p,n/		
	/peere/	'persons' oo
	/neere/	'straight'
/p,n/		
	*/appam/	'bread'
	/annam/	'rice'
/p,n/		
	*/kappu/	'cup'
	/kannu/	'eye'
/p,n̄/		
	/pet̄ti/	'box'
	*/net̄ti/	'shocked'
/p, ñ/		
	/uRappu/	'security'
	/uRaññu/	'to sleep'
/p l/		
	/pakṣam/	'side' : '
	/lakṣam/	'lakh'
/p,l/		
	/uppu/	'salt'
	/ullu/	'in side'
/p l̄/		
	/eppool̄/	'at whattime'
	/elut̄i/	'wrote'
/ p r/		
	*/raṇṭu/	'once upon a time'
	/raṇṭu/	'two'
/p s/		
	/paḍyam/	'poetry'
	/saṭyam/	'truth'
/ p s̄/		
	/payar/	'pod'
	/ṣayar/	'share'
/p, s/		

/sata/	'hundred'
/ p, h /	
*/paaram/	'very much'
/haaram/	'garland'
/p, v/	
/pala/	'many'
/vala/	'net'
/p, y/	
/paatram/	'vessel'
/yaatra/	'journey'
/ph, b, t, d, o, ch, j, jh, k, kh/	
/phalam/	'result'
/balam/	'strength'
/talam/	'palm' : 'place below'
*/dalam/	'petal'
/calam/	'pus'
*/chalam/	'lie'
/jalam/	'water'
*/jhala/	'daughter'
/ /	
/kalam/	'pot'
*/khalam/	'tank'
/ph, bh /	
*/viphalam/	'unfruitful'
/vibhavam/	'resource'
/ ph, th /	
*/kapham/	'phelegm'
/katha/	'story'
/ ph, dh /	
/phalam/	'result'
/dhanam/	'wealth'
/ph , R/	
/phiisu/	'fees'
/Rittu/	'wreath'

/ ph, R/	
/phiisu/	'fees'
/Riittu/	'wreath'
/ph, t, ð, /	
/phaaktu/	'FACT'
/ṭaaksu/	'tax'
/ḍaaktar/	'doctor'
/ph, g, m/	
*/phanam/	'hood'
/ganam/	'multitudē'
/manam/	'smell'
/ph, gh/	
*/phaaṣan/	'fashion'
/ghooṣam/	'huzza'
/ph, n/	
/phalam/	'result'
*/ṇalam/	'soon'
/ph, n, ṇ, l, ḷ, ḹ, r, y/	
/kapham/	'phlegam'
/kanam/	'weight'
*ḥkanam/	'drop'
/kalam/	'pot'
*/kaḷam/	'yard'
*/kaḷa/	'slender'
/karam/	'tax'
*/kayam/	'eddy'
/ph, ṇ, ṇ/	
/kaaphi/	'coffee'
*/kaṇṇi/	'gruel'
*/kaṇṇi/	'burnt'

/ph, <u>n</u> , t/	
/kaaphi/	'coffee'
/ph, s, v/	
/phalam/	'result'
/sthalam/	'place'
* <u>p</u> valam/	'right side'
/ph, s/	
/phool <u>s</u> u/	'force'
/soopp <u>u</u> /	'shop'
/b, bh/	
/batta/	'allowance'
/bhitti/	'wall'
/b, R/	
/boor <u>d</u> u/	'board'
/Ro <u>o</u> du/	'road'
/b t/	
/biska <u>R</u> Ru/	'biscuit'
/t <u>i</u> kka <u>R</u> Ru/	'ticket'
/b, <u>d</u> /	
/baa <u>d</u> ku/	'bank'
/da <u>a</u> nu/	'dance'
/ b, g /	
/boor <u>d</u> u/	'board'
/go <u>o</u> l <u>d</u> u/	'gold'
/b, m, <u>n</u> /	
/ba <u>a</u> la/	'girl'
/ma <u>a</u> la/	'necklace'
/na <u>a</u> lu/	four
/b, n/	
/byu <u>u</u> tt <u>i</u> /	'beauty'
/nyu <u>u</u> su/	'news'
/ b n. /	
*/k <u>l</u> ab <u>b</u> u/	'hotel'

/ b, ñ /	
*/ban <u>ṭ</u> tu/	'bund'
*/ <u>ṇ</u> an <u>ṭ</u> tu/	'orab'
/ b, l /	
/boodham/	'consciousness'
/lookam/	'world'
/ b r /	
/baadha/	'trouble'
/raadha/	'personal name'
/ b, s, v /	
/balam/	'strength'
/sthalam/	'place'
*/valam/	'right side'
/ bh, t /	
/bharan <u>ṇ</u> am/	'administration'
/taran <u>ṇ</u> am*	'should give'
/ bh, th /	
/abhayam/	'shelter'
/athavaa/	'if not : or'
/ bh, d /	
/bhak <u>ṣ</u> an <u>ṇ</u> a/	'food'
/dak <u>ṣ</u> in <u>ṇ</u> a/	'south'
/ bh, dh /	
/bharan <u>ṇ</u> am/	'administration'
/dhaarana/	'understanding'
/ bh, R /	
/bhitti/	'wall'
/Riittu/	'wreath'
/ bh, C /	
/bhaaram/	'weight'
/caaram/	'ash'

/ bh, j /	
/bhayam/	'fear'
/jayam	'success'
/ bh k/	
bhavanam	'house'
kavanam	'literary work'
/ bh, kh /	
bhavanam	'house'
khanam	'mining'
/ bh, g /	
/bhra ^h ant ^h an/	'Brahmin' X
/gra ^h am ^h /	'village'
/ bh, gh /	
/bha ^h tt ^h u/	'a caste'
/gha ^h tt ^h am/	'stage'
/ bh, m, <u>n</u> , l /	
/bhayam/	'fear'
/*mayam/	'softness'
/ <u>n</u> ayam/	'policy'
/layam/	'absorption'
/ bh, n /	
/vibhavam/	'resources'
/vinayam/	'humbleness'
/ bh, r /	
/bhu ^h umi/	'earth'
/ru ^h pa/	'rupee'
/ bh, s /	
/bha ^h aaram/	'weight'
/sa ^h aaram/	'jist'
/ bh <u>s</u> /	
/vibhavam/	'resource'
/vi ^h sayam/	'subject'

/ bh, ã /

bhikṣa

'alms'

ṣikṣa

'punishment'

/ bh, h /

/bhaaram/

'weight'

*/haaram/

'garland'

/ bh, v /

'vibhāgam'

'portion' : 'division'

vivaaham

'marriage'

/ bh, y /

bhavanam

'house'

*yavanam

Δ 'greek' man'

/ t, th /

/kattu/

'letter'

/katha/

'story'

/ t, d /

/taanum/

'self- and'

/daanam/

'gift'

/ t dh /

/tiiram/

basin : coast

/dhiiram/

'bold'

/ t, R /

/tootu/

'shell'

/Roodu/

'road'

/t, ṭ /

/tinnu/

'eat' (you sg)

*/ṭinnu/

'tin'

/ t, ṭh /

*/paata/

'path'

/paatham/

'lesson'

/t , c /		
	/tala/	'head'
	/oila/	'some'
/ t, g /		
	/tiri/	'wick'
	/giri/	'personal name'
/ t, gh /		
	tattam	'vessel'
	ghattam	'stage'
/ t, m, n, v /		
	/tat/	'timber'
	/mat/	'laziness'
	/nat/	'actress'
	/vat/	'stick'
/ t, n, n /		
	/pata/	'foam'
	*/pana/	'palm tree'
	/panam/	'money'
/ t, n /		
	/tahn/	' a muslim caste'
	/nann/	'we'
/ t, n /		
	/muutta/	'elder'
	*/muunna/	'owl'
/ t, l /		
	/tala/	'head'
	*/lata/	'creeper'
/ t, l /		
	*/vita/	'wowing'
	/vila/	'crops'
/ t, l /		
	*/kooli/	'hen'
	*/kooti/	'out'

/ t, r /	
*/tan <u>ṭ</u> tu/	'stem'
/ra <u>ṭ</u> tu/	'two'
/ t, s, ṣ /	
/tooppu/	'fertile land'
/sooppu/	'soa <u>ṇ</u> p'
/ṣooppu/	'shop'
/ t, ṣ /	
/pata/	'foam'
/pa <u>ṣa</u> /	'gum'
/ t, h /	
/tanikku/	self
/hanikka/	to kill
/t , y /	
/tan <u>ṇ</u> tram/	tact'
/yan <u>ṇ</u> tram/	'machine'
/ th, R, ṭ, o, k, m, <u>n</u> , m, <u>ṇ</u> , <u>ñ</u> , ṅ, l, <u>ḷ</u> , <u>ḷ</u> , r, s, y /	
/katha/	story
/ka <u>Ra</u> /	stain
/ka <u>ṭa</u> /	shop
*/ka <u>o</u> ca/	cloth
/k <u>a</u> kka/	shell
*/ka <u>m</u> mal/	ear or <u>na</u> ment
/ka <u>n</u> ni/	' a month ' (in M B)
/ka <u>ṇ</u> nu/	'eye'
*/ka <u>ñ</u> ni/	'rice gruel'
*/ka <u>ṅ</u> ṇi/	'burnt'
/ka <u>ḷa</u> ḷ/	'art'
*/ka <u>ḷa</u> /	'weed'
*/ka <u>ḷa</u> /	'young tree cut for a post'
/ka <u>r</u> a/	'border-line'
*/ka <u>s</u> avu/	lace of gold or silver
/ka <u>y</u> a/	rope

/th, d, dh, th /		
	*/patham/	'path'
	/padam/	'word'
	/vidham/	'manner'
	/paatham/	'lesson'
/ d, dh /		
	/daanam/	'gift'
	/dhanam/	'wealth'
/ d, R, t, th /		
	/paadam/	'foot'
	/paaRa/	'rock'
	*paatam/	'field'
	/paatham/	'lesson'
/ d, d, dh/		
	/vridhhi/	'development'
	*/v ^d i ^h hi/	'fool'
/ d, g, gh /		
	/daanam/	'gift'
	/gaanam/	'song'
	/ghanam/	'weight'
/ d, m /		
	/daanam/	'gift'
	/maanam/	'prestige'
/ d, n /		
	/dalam/	'petal'
	*/naalam/	'soon'
/ d, th, n, n, n̄\$, d, l, l, r, s, h, y /		
	*/madam/	'proud'
	/matham/	'house'
	/manam/	'mind'
	/manam/	'smell'
	/maṇṇa/	'yellow'

/maññi/	'became dim'
/mala/	'mountain'
/ma _l a/	'rain'
/maram/	'tree'
*/maṣi/	'ink'
/mahaan/	'great man'
*/mayam/	'softness'
/ d, s /	
/dukham/	'sorrowfulness'
/sukham/	'comforness'
/ d , ṣ /	
/deesam/	'country'
/ṣeesam/	'remaining port'
/d, v /	
/dattu/	'adoption'
/vittu/	'seed'
/ d, ḷ /	
/paadam/	'foot'
/paalam/	'rail'
/ dh, R /	
madhu	'personal name'
*maRu	'mole'
/ dh, ṭ /	
/vidhu/	'moon'
/viṭu/	'to let free'
/ dh, c /	
/ciira/	'bold woman'
/ciira/	a kind of vegetable
/ dh, j, g, ḡh, m, h, v /	
/dhanam/	'wealth'
/janam/	'people'
/ganam/	'multitude'

/ghanam/	'weight'
*/manam/	'mind'
/hananam/	'killing'
/vanam/	'forest'
/ dh, k /	
/dhaarana/	'understanding'
/kaaranam/	'reason'
/ dh, n /	
/maadhavan/	'personal name'
*/maanavan/	'man'
/ dh, n /	
/dhiiram/	'boldness'
/niiram/	'water'
/ dh , n, ñ, ñ, l, l /	
/madhu/	'personal name'
/mani/	'bell'
/mañña/	'yellow'
/maññi/	'became ⁱⁿ the '
/mala/	'mountain'
/malu/	'axe'
/ dh, r /	
*/vidhi/	'fate'
/viri/	'cappet'
/ dh, s /	
/vidham/	'manner'
*/viṣam/	'poison'
/ dh, y /	
*/dhaatri/	'step mother'
/yaatra/	'journey'
/ R, th /	
9 /paarasaala/	'place name'
/paathaasala/	'school'

/ R, ḍ /

/Rayil/

rail

/ḍayal/

dial

/ R, ch /

*/puccham/

'contempt'

/puRRuḥ/

'mole-hill'

/ R, j /

*/kuuRa/

'cloth'

/kuuja/

'goḥlet'

/ ṭ, ḍh /

*/viḍḍhi/

'fool'

/vittu/

'let free'

/ ṭ, ch ḍ /

/tuṭam/

'a measure'

/tucham/

'littleness'

/ ṭ, j /

*/kuuṭa/

'receiptaculam'

/kuuja/

'goḥlet'

/ṭ jh /

*/ṭaṅkaaram/

'twang'

*/jhaṅkaaram/

'sibilisation' : 'hiss'

/ ṭ, kh /

/mutṭam/

'place name'

/mukham/

'face'

/ ṭ, g /

/ṭauvar/

'tower'

/gaurevam/

'seriousness'

/ ṭ, gh /

*/meetam/

' a month (in M.E)'

/meegham/

'cloud'

/ ṭ, s /

/maṭi/

'laziness'

/mạsi/

'ink'

/ṭ, s /

nạṭicoa

'Pretended- which'

nạsioca

'perished - which'

/ ṭ, h /

/aṭi/

'foot'

*pạhi/

'snake'

/ṭ, v /

/paaṭam/

'field'

/paaṿam/

'poor'

/ ṭh, ḍ /

*/piiṭham/

'stool'

*p̣piiḍa/

'ailment'

/ ṭh, c, j, k /

*/ matḥam/

'house'

/mac̣ou/

'ceiling'

*/mag̣ja/

'marrow'

/maḳan/

'son'

/ ṭh, m /

*satḥicou/

'betrayed'

/ṣaṃicou/

'appensed'

/ ḍ, c /

/ḍansu/

'dance'

/caansu/

'chance'

/ ḍ, j /

/ḍayaḷj/

'dial'

/jayiḷj/

'jail'

/ ḍ, k /

/ḍattu/

'death'

/kattu/

'letter'

/ ḍ, ḡ, m , ṇ, y /

/ḍaansu/

'dance'

/ḡaanam/

'song'

/maanam/

'prestige'

*/ṇaamam/

'name'

*/yaanam/

'journey'

/ ḍ, ṇ, ṇ̄, ṇ̄̄, l, ḷ /

/ṣeḍḍu/

'shed'

/peṇṇu/

'girl'

/ṇeṇṇu/

'chest'

/teṇṇu/

'coconut tree'

*/ellu/

'bone'

*/eḷḷu/

'gingelly'

/ ḍ, ḷ /

/piḷḍa/

'ailment'

/piḷa/

'fine'

/ ḍ, r /

*/viḍ^ḍhi/

'fool'

/viri/

'carpet'

/ ḍ, s /

/Roḍu/

'road'

*/Roosu/

'rose'

/ ḍ, ṣ /

*/ḍaappu/

'prescription'

/ṣaappu/

'shop'

/ ḍ, ṣ̄ /

/ḍaansu/

'dance'

*/ṣaanti/

'peace'

/ ḍ, v /

/ḍayaḷ/

'dial'

*/vayaḷ/

'field'

/ ḍh, c, m, ṇ /

/viḍḍhi/

'fool'

*picci

'jasmine'

/vimmi/

'having suffocated'

/viṇṇi/

'having got pain'

/ ḍh, k, l, ṣ, v /

/muuḍhan/

'numskull'

/muukan/

'tongue-tied : dump'

/muukan/

'tongue - tied: dump'

/muulamp/

'reason'

ḍ muuṣa/

'mould'

/muuvar/

'three persons'

/ o, g /

*/caṇam/

'jute'

/gaṇam/

'multitude'

/ c, gh /

/caṭṭam/

'rule'

/ghaṭṭam/

'stage'

/ o, ṣ /

/caakku/

'sack'

/ṣaap̣pu/

'shop'

/ c, ṣ /

/oila/

'some'

/ṣila/

'rock'

/ o h /

/oiṇṭa/

'thought'

/hindu/

'Hindu'

/ o, v /

/cakram/

'wheel'

/vakram/

curved : crooked

/ oh, g /

*/chaaya/

'likeness'

/gaayakan/

'musician'

/oh, gh /

/channam/

'hidden'

/ghanam/

'weight'

/ oh, m, n, v /

*/chaaya/

'likeness'

/maaya/

'personal name'

*/naaya/

'dog'

*/vaaya/

'mouth'

/ oh, n , n, r, l, l, l /

/pucham/

'contempt'

/punam/

'hole'

/punyam/

'goodness'

/puram/

'city'

/pula/

'pollution observed when a relative is lost'

/puli/

'tamarind'

/pula/

'river'

/ oh, y /

/chatram/

'umbrella'

/yantram/

'machine'

/ j, n, l, /

/jayam/

'success'

/nayam/

'tact'

/layam/

'absorption'

/ j, n /

/vijayam/

'success'

/vinayam/

'humbleness'

/j, ñ, /

/kuuja/

'goblet'

/muu^uja/

'mushroom'

/ j, ñ, ñ^h, l, l /

/majja/

'marrow'

/mañña/

'yellow'

/maññi/

'became dim'

/malli/

'coriander'

/mala/

'rain'

/ j, l, r /

/kuuja/

'goblet'

/kuli/

'bathe'

/kuura/

'roof'

/ j, s /

/jaasti/

'plenty'

/saaksi/

'witness'

/ j, s /

/puujyam/

'cipher'

/duusyam/

'defect'

/ j, ś /

/jaati/

'caste'

/śaala/

'chamber' : 'hall'

/ j, y /

/jaalam/

'multitude'

/yastara/

'journey'

/ jh, m, ñ, s, ś, v /

*/jhala/

'daughter'

/mala/	'mountain'
/nalam/	'soon'
/sala/	'total amount of a 'Kuri'
/sila/	'rock'
/vala/	'net'
/ k, g /	
/kanam/	'drop'
/gaṇam/	'multitude'
/ k , gh /	
/kaṭṭu/	'made theft'
/ghaṭṭam/	'stage'
/ k, ṣ, h /	
/kayaR/	'rope'
/ṣayaR/	'share'
/hayaR/	'higher'
/ kh, g, ṣ, l, r, v, ṇ /	
/khaṇḍam/	'piece'
*/gaṇḍam/	'cheek'
*/ṣaṇḍam/	'cluster'
/laṇḍan/	'London'
/raṇṭu/	'two'
/vaṇṭu/	'beetle'
*/ṇaṇṭu/	'crab'
/ kh, m /	
/khanna/	'personal name'
/mannu/	'a measure'
/ ṣ ṇ /	
/ṣaṇyam/	'considerable'
/ṇaṇyam/	'coin'
/ ṣ, ṇ, ṇ, /	
/peggu /	'peg'

/pen <u>ṇ</u> nu/	'girl'
/pen <u>ṇ</u> hal/	'sister'
gh, <u>n</u> /	
/ghat <u>ṭ</u> am/	'stage'
/nat <u>ṭ</u> am/	'middle part of the body'
' gh, l, ṣ, ṣ̄, y /	
/meegham/	'cloud'
/meelam/	'festival'
/mee <u>ṣ</u> am/	'sheep'
/mee <u>ṣ</u> a/	'table'
/meeyam/	'measurable'
/ m, ṣ /	
/maappu/	'map'
/saappu/	'shop'
/ <u>n</u> ṣ̄ , h , v /	
*/nar <u>l</u> /	'tiger'
/s <u>ar</u> l/	'right'
/har <u>l</u> /	'personal name'
/var <u>l</u> /	'row'

A L L O P H O N I C D I S T R I B U T I O N
=====

o f
n e

VOWELS AND CONSONANTS
=====

A L L O P H O N I C D I S T R I B U T I O N

V O W E L S

i / [i I]

[i] - High front unrounded tense voiced occurs initially and with length medially and finally

eg:

/illa/	[i l : ^]	'not'
/viittil/	[v i : t : I l]	'in the house'
/til /	[t i :]	'fire'

[I]

Lower high front unrounded voicoid occurs medially and finally without length

'e / [e E]

[e] High front unrounded tense voicoid occurs initially and with length medially and finally.

eg:

/etra /	[e t r ^]	'how many'
/peeru /	[p e : e u]	'name'
/annee/	[^ n : e :]	'on that very day' (emph)

[E]

Mean mid unrounded voicoid occurs medially and finally without length

eg:

/innale/	[i n : e l E]	'yesterday'
/veli /	[v E l I]	'out side'

/ a / [a ^]

[a]

Lower mid unrounded central voicoid occurs without length medially in the non-initial syllables.

eg.

/mooṣam/	[m o : s a m]	'bad'
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[ʌ]

Lower mid unrounded back vocoid occurs in all other positions

/ alla /	[ʌ l : ʌ]	'not'
/ pala /	[p ʌ l ʌ]	'many'
/ aana /	[ʌ : n ʌ]	'elephant'

(When preceded by a velar Consonant the lower and mid unrounded back vocoid tends to become more retracted resulting into a low back unrounded vocoid [a] as in the word / kaakka / [ka : k : a] 'crow')

/ o / [o]

Mid unrounded back vocoid occurs initially medially and with length finally

eg :

/ oru /	[oru]	'one'
/ kooou /	[k o oo]	'child'
/ tannoo /	[t ʌ n : o :]	'is (it) given?'

/ u / [u, u]

[u]

High back rounded tense vocoid occurs initially medially and with length finally

eg :

/ ucoa /	[ucoʌ]	'mid-noon'
/ kuttī /	[kut̪ : i]	'boy' : 'child'
/ puu /	[p u :]	'flower'

[u]

Lower high back unrounded vocoid medially except in the first syllable and word finally without length

/ krusi /	[krus̪ i]	'agriculture'
/ kaattu /	[k ʌ : t : u]	'having waited'

CONSONANTS

/ p / [p b p]

Bilabial voiced stop [b] with an onset of heavy voicing which fades towards the end occurs after a homorganic nasal ; bilabial semi-voiced continuant [ɸ] occurs intervocally ; bilabial voiceless stop [p] occurs word initially medially, in clusters and with length.

e.g.	/kampani /	[kʌmbʌnɪ]	'Company'
	/vilaapam /	[vɪla : bəɪm]	'lament'
	/pala /	[pʌlʌ]	'many'
	/kappal /	[kʌp : ʌl]	'ship'

/ph / [ph]

Bilabial voiceless aspirated stop occurs initially and medially

e.g.	/phalam/	[phʌlɐm]	'result'
	*/kapham /	[kʌphɐm]	'mucous of the throat'

(In loan words; (usually in English loan words) the bilabial voiceless aspirated stop [ph] freely varies with [f], a bilabial voiceless fricative, occurs initially and medially

e.g.	/phiisu /	[fiisu]	'fee'
	/aaphiisu /	[aafiisu]	'office'

/b/ [b]

Bilabial voiced stop occurs initially and medially and in clusters.

e.g.	/baakki /	[bʌ : k : i]	'balance'
	/klabbu/	[kʌb : u]	'Club'
	/braahmanan /	[brʌ : m : ə n ə n]	'Brahmin'

/bh / [bh]

Bilabial voiced aspirated stop occurs initially and medially.

e.g.	/bhitti /	[bhɪt : i]	'wall'
	/abhayam /	[ʌbhʌyɐm]	'place of protection'
	/abhyarthana /	[ʌbhyʌrtʰʌnʌ]	'appeal'

/t / [d̪ t̪]

Dental voiced stop [d̪] with an onset of heavy voicing which trails off towards the end, occurs after homorganic nasal, dental voiced continuant with slight friction [d̪] occurs inter-vocally and after /y/ and dental voiceless stop [t̪] occurs elsewhere with or without length.

e. g.	/canta /	[cʌn d̪ʌ]	'market'
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/ itu /	[i <u>ɖ</u> u]	'this'
/ peytu /	[pɐ <u>y</u> ɖu]	'showered'
/ tattvatte /	[t ^h t ^h v ^h t ^h v]	'Principle' (oo)
/ raatri /	[r ^h : tr ^h]	'night'

/ th / [th]

Dental voiceless aspirated stop occurs word medially only.

Eg.	/ katha /	[k ^h th ^h]	'story'
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/ d / [d]

Dental voiced stop [d] occurs initially and medially

Eg.	/ duuram /	[du : r <u>am</u>]	'distance'
	/ addeeham /	[^h d ^h i : e ^h t ^h a ^h m]	'he'
	/ mudra /	[mu <u>dr</u> a]	'seal'

/ dh / [dh]

Dental voiced aspirated stop occurs initially and medially

Eg.	/ dhanam /	[dh ^h a ^h n ^h a ^h m]	'wealth'
	/ vidham /	[v ^h i ^h d ^h a ^h m]	'manner'
	/ addhyaapika /	[^h d ^h i ^h s ^h y ^h a ^h : p ^h i ^h s ^h a ^h]	'lady teacher'

/ R / [.t̤ .d̤ R]

Alveolar voiceless stop [t̤] occurs with length medially;
alveolar voiced stop [d̤] after homorganic nasal;
alveolar trill [R] occurs in all other positions.

Eg.	/ ka <u>RR</u> u /	[k ^h a ^h : .t̤ <u>u</u>]	'wind'
	/ en <u>R</u> e /	[e ^h n ^h d̤ ^h e ^h]	'of me : my'
	/ pa <u>R</u> a /	[p ^h a ^h : R ^h]	'rock'
	/ Re <u>s</u> an /	[R ^h e ^h : s̤ a ^h n]	'vation'

/ t̤ / [t̤ d̤ t̤]

Retroflex voiceless stop [t̤] occurs initially, medially
retroflex voiced stop [d̤] with an onset of heavy
voicing which fades out towards the end after a hetero-
organic nasal; and semi-voiced retroflex stop [t̤̥] occurs
intervocally.

/ t̪ikkaRRu /	[t̪ɪk : ə t̪ɪ u]	'ticket'
/ pat̪tu /	[p ʌ t̪ɪ u]	'silk'
/ Rippoor̪ttu /	[Rɪp : o : r̪ t̪ɪ u]	'r̪əport'
/ ran̪tu /	[r ʌ n̪ d̪ u]	'two'
/ pot̪i /	[p o t̪ɪ]	'dust'

/ th / [th]

Retroflex voiceless aspirated stop occurs only in the medial position.

Eg. / paatham / [p ʌ : th ʌ m] 'lesson'

/ d̪ / [d̪]

Retroflex voiced stop [d̪] occurs initially and medially.

Eg. / dayal / [d̪ a y ʌ l] 'dial'
 / ad̪m̪is̪ən / [ʌ d̪ m̪ɪ s̪ ə n] 'admission'
 / Red̪d̪i / [R ɛ d̪ : i] 'personal name'

/ dh̪ / [dh̪]

Retroflex voiced aspirated stop [dh̪] occurs medially only

/ d̪r̪dh̪am / [d̪ r̪ d̪ ʌ m] 'firm'

/ o / [j̪ t̪ c̪]

Palatal voiced stop [j̪] with a heavy voicing which fades out towards the end after a homorganic nasal;
 Semi-voiced palatal stop [t̪] without length intervocalically; palatal voiceless stop [c̪] occurs with or without length elsewhere.

Eg. / ãncu / [ʌ n̪ j̪ u] 'five'
 */ rũci / [rũ t̪ɪ] 'taste'
 / cĩri / [cĩ r̪ɪ] 'laughter'

/ ch / [ch]

Palatal voiceless aspirated stop [ch] occurs initially and medially.

Eg. */ chatram / [ch ʌ tr ʌ m] 'umbrella'
 / tuc̪ch̪am / [tũ ch̪ ʌ m] 'a little'

/ j̪ / [j̪]

Palatal voiced stop [j̪] occurs initially and medially.

Eg.	/ jiivan /	[ji : vən]	'life'
	/ vijayam /	[vɪjajəm]	'success'
	/ uurjjitam /	[u :rj : Idəm]	'enthusiasm'

/ jh / [jh]

Palatal voiced stop [jh] occurs initially and medially.

Eg.	*/ jhala /	[jhʌlʌ]	'daughter : girl'
	/ nirjhari /	[nɪrjhərɪ]	'stream'

/ k / [g ɐ k]

Velar voiced stop [g] with a heavy voicing which fades out towards the end occurs after a homorganic nasal; Semi-voiced velar Continuent [ɐ] occurs intervocalically and after / y / velar voiceless stop elsewhere.

Eg.	/ paṅku /	[pʌŋgɐ]	'share'
	/ makan /	[mʌɐən]	'son'
	/ vayki /	[vʌyɐɪ]	'became late'
	/ kampani /	[kʌmɐni]	'Company'
	/ raktam /	[rʌktəm]	'blood'

/ kh / [kh]

[kh]

Velar voiceless aspirated stop [kh] occurs initially and medially.

Eg.	/ khaṇanam /	[khʌnʌnʌm]	'mining'
	/ meekhala /	[me:khʌlʌ]	'zone'

/ g / [g]

Velar voiced stop [g] occurs initially and medially.

Eg.	/ guṇam /	[guṇəm]	'quality'
	/ anugraham /	[ʌnugrahəm]	'blessing'

/ gh / [gh]

Velar voiced aspirated stop [gh] occurs initially and medially

Eg.	/ ghaṭṭam /	[ghʌt : ʌm]	'stage'
	*/ meegham /	[me : ghʌm]	'cloud'

/ m / [m]

Bilabial nasal [m] initially, medially (with or without length) and finally.

/ maram /	[m ^ r ə m]	'tree'
/ nammal /	[n ^ m : ə l]	'we'
/ uma /	[um ^]	'goddess'

/ n / [n]

Dental nasal [n] occurs initially without length medially with or without length or preceding the homorganic stop.

Eg. / naalu /	[n ^ : l u]	'four'
/ n i nnu /	[n i n : u]	'stood'

/ n / [n]

Alveolar nasal [n] initially, medially with or without length by preceding the homorganic nasal, 'an Clusters' and finally without length.

Eg. / nyaayam /	[ny ^ : y ə m]	'justice'
/ nāan /	[n̄ ^ : n]	'I'
/ vanam /	[v ^ n ə m]	'forest'
/ enRe /	[en d E]	'of me : my'
/ vinyaasam /	[V i ny ^ : s ə m]	'setting up'

/ n / [n]

Retroflex nasal [n] occurs medially and finally

Eg. / maraṇam /	[m ^ r ^ ṇ ə m]	'death'
/ peṇ /	[p E ṇ]	girl

/ n̄ / [n̄]

Palatal nasal [n̄] occurs initially without length and in Clusters, and medially with length except when in Clusters.

/ nāan /	[n̄ ^ : n]	'I'
/ paṇṇi /	[p ^ n̄ : i]	'cotton'
/ aṇcu /	[^ n̄ l u]	'five'

/ ŋ / [ŋ]

Velar nasal [ŋ] occurs medially with length or in Clusters.

Eg.	/ vaahhi /	[v ʌ : ɪ : I]	'bought'
	/ pahku /	[p ʌ h g u]	'share'

/ l / [l]

Alveolar lateral [l] occurs in all positions.

Eg.	/lookam/	[lo:k ə m]	'world'
	/ pala /	[p ʌ l ʌ]	' many '
	/ kappal /	[k ʌ p : ʌ l]	'ship'

/ ɭ / [ɭ]

Retroflex lateral [ɭ] occurs in all positions (But its initial occurrence is very limited)

*/loohe /	[lo:sh ʌ]	'The dress of a Christian Priest'
*/ luusi /	[ɭ u : s I]	'personal name'
/ vili /	[vɪɭ I]	'calling'
/ makal /	[m ʌ ʂ ʌ l]	'daughter'

/ ɭ / [ɭ]

Retroflex lateral fricative [ɭ] occurs medially without length

Eg.	/ mala /	[m ʌ ɭ ʌ]	'rain'
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/ r / [r ɾ]

Alveolar voiced flap [r] initially intervocalically and as the second constituent in Clusters with / b /, / d /, / g / and either as the first or second constituent with / g /; alveolar trill, [r] occurs elsewhere.

Eg.	/ raatri /	[r ʌ : tɾ I]	'night'
	/ maram /	[m ʌ r ə m]	'tree'
	/ kaaryam /	[k ʌ : r y ə m]	'matter'
	/ braahmanan /	[br ʌ : m ə n ə n]	'Brahmin'
	/ mudra /	[m u d r ʌ]	'seal'
	/ aagraham /	[ʌ : g r ə h ə m]	'desire'
	/ avar /	[a v ə r]	'they'

/ s / [s]

Alveolar voiceless fricative [s] occurs initially medially and in clusters.

Eg.	/ satyam /	[s ʌ tyə m]	'truth'
	/ vayassu /	[v ʌ yə s : u]	'age'
	/ maasam /	[m ʌ : s ə m]	'month'
	/ sthalam /	[sth ʌ l ə m]	'place'

/ ɐ / [ɐ]

Retroflex voiceless fricative [ɐ] initially medially and in Clusters.

Eg.	/ ɐappu /	[ɐ ʌ : p : u]	'shop'
	/ ɐeekṣa /	[ʌ p ɐ : k ɐ ʌ]	'application'
	/ maɐi /	[m ʌ ɐ I]	'ink'

/ ɛ / [ɛ]

Palatal voiceless fricative [ɛ] without length initially and with or without length medially.

Eg.	/ ɛakti /	[ɛ ʌ kɪ I]	'strength'
	/ moɛam /	[mo : ɛ ə m]	'bad'
	/ oāṇṇaṇṇaṣṣeeri /	[o ʌ ṇ : ʌ n ʌ : ɛ : e : ri]	'place name'

/ h / [h]

Velar voiceless fricative [h] occurs initially and medially without length.

Eg.	/ hintu /	[h Inɪ u]	'Hindu'
	/ daaham /	[d ʌ : h ə m]	'thirst.'

/ v / [v]

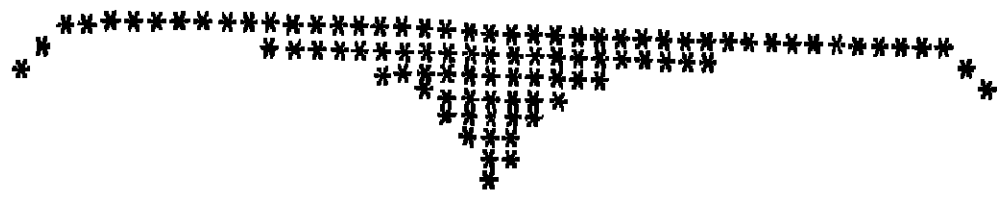
Labiodental voiced Continuant [v] occurs initially and with or without length medially.

Eg.	/ vanam /	[v ʌ n ə m]	'forest'
	/ avan /	[av ə n]	'he'

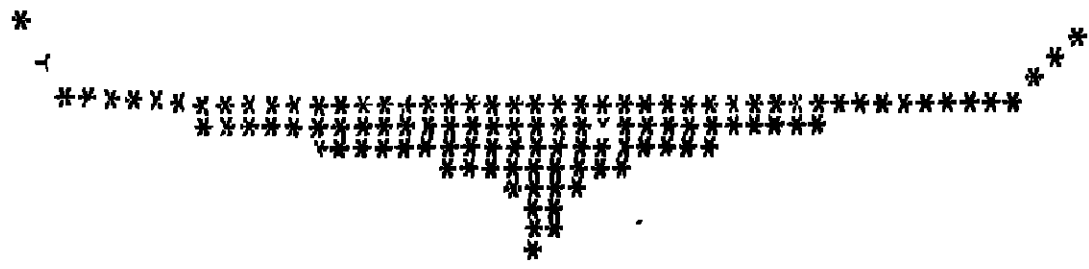
/ y / [y]

Palatal Continuant [y] initially medially and in Clusters.

Eg.	/ yaatra /	[y ʌ : tr ʌ]	'travel'
	/ pooyi /	[po : y I]	'went'



SYLLABIC STRUCTURE
=====



SYLLABIC PATTERN OF MALAYALAM

BASIS OF SYLLABIFICATION:

1. Vowel both long and Short or Cluster like / ai / and / au / Constitutes the nucleus of a Syllable. So they are as many number of Syllables in a word as they are vowels.
2. The initial Consonants or Consonant Clusters form the onset of the first Syllable. Word final Consonant forms the Coda of the final Syllable.
3. Medial Consonants with or without length go with the preceding vowel or vowel clusters.

SYLLABIC STRUCTURE

In a Syllable, both onset (O) and Coda (C) are optional and nucleus (N) is obligatory : i.e.

$$S = (O) N (C)$$

Any one of the vowels Short or long, Constitutes the nucleus of a Syllable. i.e., $N = V (V)$. The onset of the initial Syllable may be any one of the word initial consonants or a consonant cluster.

Any one of the Consonants with or without length or Consonant, Cluster can form the coda of medial syllable.

SYLLABIC PATTERN OF MALAYALAM

Mono Syllabic patterns are very few in Malayalam. Disyllabic and trisyllabic words are more. (Disyllabic words are more than trisyllabic words) Other types are also very fewer in number.

MONO SYLLABIC WORDS

V	/ i /	'this'
VV	/ ii /	'this'
CVC	/ pen /	'girl'
CCVV	/ ̄rri /	'a respectable term'
CVV	/ tii /	'fire'
CVVC	/ keel /	'to hear'
CCVVC	/ ̄kuul /	'School'
CCCVV	/ strii /	'woman'
CCCVVC	/ SRRiil /	'steel'

Multi Syllabic words :

Initial Syllable :

VC	/ ot - i /	'to break'
VVC	/ eel-u /	'seven'
VCC	/ etr-a /	'how many'
VCCCC	/ in SRR-iRRy-uutt-u /	'Institute'
VVCC	/ eeRR-am /	'ascending'
VVCCC	/ aarkk-u /	'wh to whom'
OVC	/ tat - i /	'timber'
CVVC	/ peer-u /	'name'
CCVC	/ p̄rat - i /	'defendent : each'
CCVVC	/ Praan - i /	'creature'
OVCCC	/ mantri -i/	'minister'
CVVCC	/ paatr -am /	'vesal'
CCVCC	/ praty - eek - am /	'separate'
CCVVCC	/ praartth-an-a /	'prayer'
CVCCCC	/ ̄ab̄kr-aib-er /	'subscriber'
CCCVVCC	/ SRRaRR-i SRR-ike-u /	'Statistics'
CCCVVCCC	/ SRRaarcc-u /	'Starch'

MEDIAL SYLLABLES

VC	/ av-it-e /	'there'
VCC	/ pantr-ant-u /	'twelve'
VVC	/ ap-aak-am /	'immature'
VVCC	/ ulpr-eeke-a /	'a figure of speech'
VVCCC	/ aag-uuk-am-am /	'with care'

FINAL SYLLABLE

V	/ vañc-i /	'boat'
VV	/ veat-ii /	'come (she) on' (voc)
VC	/ viitt-il /	'in house'
VVC	/ var - aam /	'may come'

DISYLLABIC PATTERNS

- (C) VCV / at-i / 'blow : foot'

 / tal-a/ 'head'
- (C) VCVC / ak-am / 'inside'

 / kat-am / 'debt'
- (C) VVC VC / aar-um/ 'nobody'

 / kaal-am / 'time'
- (C) VVC VVC / aak-aam / 'may be',

 / pook-aam / 'may go'
- (C) VC VVC / it-aam/ 'may put'

 / var-aam / 'may come'
- (C) VVC V / oot-i / 'ran'

 / kuut-i / 'increased'
- (C) VCVV / anii /* 'personal name' (voc)

 / manii /* 'personal name' (voc)
- (C) VVCCVV / aacco-ii*// 'personal name' (voc)

 / oeecco-ii*// 'elder sister' (voc)

TRI SYLLABIC PATTERN

1.	CVCVCVC	Viv-ar-am	'information'
2.	CVVC VVC VC	Seam-aan-am	'substance'
3.	VC VC V	ar-ut-u	'don't be'
4.	CVCC VVC VC	Ceyy-aan-um	'for doing and'
5.	CVC VVC VV	Kum-aar-oo	'personal name' (voc)
6.	CVC VVC V	nir-aar-a	'despair'

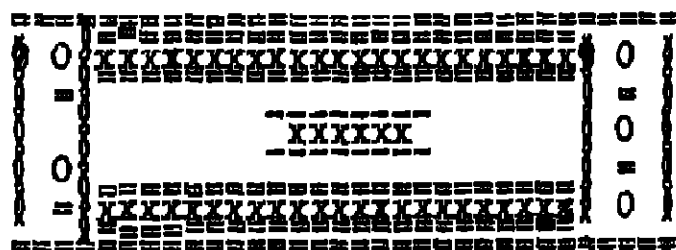
QUADRI SYLLABIC PATTERN

1.	VVC VVC VC V	aar-aadh-an-a	'worship'
2.	CVC VVC VC VC	rah-ood-ar-an	'brother'
3.	CVC VVC VVC VC	sam-aadh-aan-am	'peace'

A N E X P E R I M E N T A L S T U D Y

O F

C O N S O N A N T C L U S T E R S



AN EXPERIMENTAL STUDY OF THE PATTERNS OF CONSONANT
CLUSTERS, BASED ON 500 SELECTED WORDS

The words for the present study have been taken from
the ^dIndex and listed as follows.

FROM CONSONANTS

/ k /

ka	beginning words	5
kaa	..	5
ki	..	5
kil	..	5
ku	..	5
kuu	..	5
ke	..	5
kee	..	5
ko	..	3
koo	..	2
Cluster	..	5
		<hr/>
		50

/ o /

oa	..	5
oaa	..	5
oi	..	5
oii	..	5
ou	..	5
ouu	..	5
oe	..	5
oeo	..	5
oo	..	5
ooo	..	5

/ t /

ta	..	5
taa	.	5
ti	..	5
tii	..	5
tu	..	5
tuu	..	5
te	..	3
tee	..	3
to	..	5
too	..	5
clusters	..	4
		<hr/>
		50

/ p /

pa	..	5
paa	..	5
pi	..	5
pii	..	2
pu	..	5
puu	..	5
pe	..	5
pee	..	5
po	..	5
poo	..	5
clusters	..	5
		<hr/>
		50

/ m /

ma	..	5
maa	..	5
mi	..	5
mii	..	5
mu	..	5

muu	..	5
me	..	5
mo	..	5
moo	..	5
		<hr/>
		50

/ v /

va	..	10
vaa	..	10
vi	..	10
vii	..	5
ve	..	5
vee	..	5
Clusters	..	5
		<hr/>
		50

From Vowels

a	..	30
aa	..	20
i	..	20
ii	..	5
u	..	25
uu	..	3
e	..	20
ee	..	7
o	..	10
oo	..	10
		<hr/>
		150

Total words from Consonant section.	:	350
Total words from Vowel	:	150
		<hr/>
Total		500

LIST OF CLUSTERS AND THEIR FREQUENCY

WORD INITIAL C1 C2 Clusters

	freq.
kt	1
ky-	2
kr-	1
ks-	1
kl-	1
tv-	1
py-	1
pl-	1
pr-	1
ny-	1
vy-	1
<u>11</u>	<u>12</u>

WORD MEDIAL TWO CONSONANT CLUSTERS

Type	Freq.
====	====
-kk-	45
-oo-	18
--tt-	29
-dd-	1
-tt-	32
-dd-	2
-pp-	12
-nn-	29
-nn-	8
-nn-	3
-nn-	5
-nn-	2

-mm-	3
-RR-	11
-ll-	1
-ll-	1
-ss-	1
-ss-	1
-ky-	1
-kr-	3
-gr-	1
-ks-	7
-ks-	7
-tr-	1
-khy-	1
-kl-	1
-jy-	1
-tr-	6
-ay-	3
-pr-	2
-ak-	6
-ag-	5
-no-	3
-ag-	2
-nt-	13
-nt-	3
-mp-	5
-nR-	6
-ny-	1
-rd-	2
-rn-	2
-rv-	2
-rs-	1
-ls-	1

- <u>l</u> s-	1
- <u>s</u> v-	1
- <u>g</u> m-	1
- <u>t</u> v-	1
- <u>k</u> s-	7
-ks-	1
-tm-	1
-och-	1
-dgh-	1
-ddh-	1
	<u>296</u>
50	291

MEDIAL THREE CONSONANT CLUSTERS

-kR ^R -	1
-ykk-	3
-rkck-	1
rtt-	1
-rjj-	1
-nty-	1
-ndr-	1
-ndr-	1
-ndr-	1
-mpy-	1
-lkk-	1
-lpp-	1
-str-	1
-sRR-	1
	<u>15</u>
13	

=====

CLASSIFICATION OF MEDIAL TWO CONSONANT CLUSTERS :-

I HOMOELIMENTAL - C1 C1 Clusters

-kk-	-ññ-	-yy-
-oc-	-ññ-	-RR-
-tt-	-nn-	-ll-
-tt-	-nn-	-ll-
-dd-	-nn-	-ss-
-pp-	-mm-	-ss-

Total Numbers 19
 Total frequency 204
 Average Frequency. 10.7

II

STOP + LIQUID / CONTINUANT /FRICATIVE AS SECOND MEMBER

kr	tr	ky	dy	ks
gr	pr	khy	tv	
tr	kl	jy	ks	
Total numbers	23			
Total frequency.	29			
Average.	2.2			

III

NASAL + STOP / CONTINUANT AS SECOND MEMBER

ñk	ñc	.nt	mp	ny
ñg	ñg	nt	nr	
Total clusters	9			
Total freq.	44			
Average Freq.	5.0			

IV

LIQUID + STOP / FRI./CONTI. AS SECOND MEMBER

<u>rd,</u>	rv	rs	ls	<u>ls</u>
Total	6			
Freq.	9			
Average.	1.5			

V S1 + S2 as SECOND ELEMENT { S1 =stop un aspirated
S2 =stop in aspirated}

-cch-	-dgh-	-ddh-
total	3	
freq.	3	
average.	1	

VI OTHER TYPES (HAVING ONLY ONE OCCURANCE EACH)

a) N1 + N2	nn	freq. 1
b) fri + N	em	.. 1
c) st + N	tm	.. 1

=====

INITIAL : CLUSTERS :-

I. STOP + LIQ/ CONTI./ FRI. AS SECOND MEMBER

kr, kl, pr, pl, ky, py, tv, ks,

Total	8
Freq.	9
Average.	1.0

other types only one example each

stop + stop	kt-	1
N + cent.	ny-	1
Cont.+ Cont	vy-	1

The most frequent item of C1 C1 Medial Clusters is -kk-

THREE CONSONANT MEDIAL CLUSTERS

- | | | |
|----|---|--|
| 1. | $\begin{array}{l} \text{[K]} \\ \text{[S]} + \text{RR} \end{array}$ | $\begin{array}{l} \text{-KRR-} \\ \text{-SRR-} \end{array}$ |
| 2. | $\begin{array}{l} \text{[kk]} \\ \text{[tt]} + \text{r} \\ \text{[jj]} \end{array}$ | $\begin{array}{l} \text{-rkk-} \\ \text{-rtt-} \\ \text{-rjj-} \end{array}$ |
| 3. | N + Stop + r/y | $\begin{array}{l} \text{-ndr-} \\ \text{-ndhr-} \\ \text{-nty-} \\ \text{-mpy-} \end{array}$ |
| 4. | Lateral + [l] [l] | $\begin{array}{l} \text{-lkk-} \\ \text{-lpp-} \end{array}$ |
| 5. | Fric + St + r | -str- |

=====

CLUSTERS
=====
XXXXXXXXXXXXXXX
=====

GENERAL
=====

C L U S T E R S

In Malayalam, Vowel Clusters are very few; only /ai / and / au / Consonant clusters occur only in the initial and medial positions. All the clusters available in the corpus have been listed separately.

TWO CONSONANT CLUSTERS :-

The following types of two consonant clusters can be identified.

- | | | |
|----------------------------------|--|---|
| 1. Stop + | Liqued
Continuant
Nasal | initially and medially
..
medially |
| 2. Fricative + | Stop
nasal
liquid
Continuant | initially, medially
.. ..
.. ..
.. .. |
| 3. Nasal + | Continuant
liquid
Stop
nasal (another)
fricative | initially medially
.. ..
medially
..
.. |
| 4. Continuant (V) + liquid (r) - | | medially |
| 5. liquid + | stop
nasal
fricative
Continuant | medially
..
..
.. |

Medial two consonant clusters of the form C1 C2 C2 can have / y r l l / as the first element C1 of the Cluster and ^{Some} ~~Some~~ of the long stops are nasals as constituting C2 C2.

Three Consonant Clusters are few in the initial position (eg. str, skr) and medially they are more in number. Clusters with more than three elements are very few in speech. But in writing they are possible. It is to be noted that loan words are bringing out new combinations of consonants to form Clusters.

CONSONANT CLUSTERS

Q INITIAL TWO CONSONANT :-

I. STOP + LIQUID (r, l, ɭ) as Second element

/ kr- /	/ kriya /	'action'
/ gr- /	/ graaman /	'village'
/ tr- /	/ troophy /	'trophy'
/ dr- /	/ draivar /	'driver'
/ dr /	/ dravyaṇḥaḥ /	'matters'
/ pr- /	/ Priya /	'sweet'
/ br /	/ braahmaṇan /	'Brahmin'
*/ mr /	/ mruti /	'death (only one exception)
/ kɭ /	/ kɭaasu /	class
/ gɭ /	/ gɭuukkoosu /	
/ pɭ /	/ pɭaan /	'plan'
/ bɭ /	/ bɭookkil /	'in block'

II. STOP + CONTINUANT - (y v)

/ ky /	/ kyaampu /	'camp'
/ jy /	/ jyeestān /	'elder brother'
/ ty /	/ tyuusan /	'tution'
/ py /	/ pyuutṭoo /	'place name'
/ by /	/ byuutṭi /	'beauty'
/ tv /	/ tvakku /	'skin'
/ dv /	/ dviipu /	'island'

III. FRICATIVE + STOP / NASAL / LIQUID / CONTINUANT : as

SECOND MEMBER

/ sk /	/ skuul /	'school'
/ st /	/ stambhanam /	'halt'
/ sp /	/ spiikkar /	'speaker'
/ sm /	/ smaaraka /	'memorial'
/ sn /	/ sneehitan /	'friend'
/ sr /	/ sraniocu /	'tried'
/ sl /	/ slookam /	'stake'
/ sv /	/ svantan /	'own'

WORD MEDIAL HOMOELEMENTAL (C1 C1) CONSONANT CLUSTERS

Nos.	Types	Example	Meaning
1.	-kk-	/kakka/	shell
2.	-ññ-	/vaanñi/	brought
3.	-cc-	/pacca/	green
4.	-jj-	/lajja /	shyness
5.	-ññ-	/paññam /	famine
6.	-tt-	/pattu /	silk
7.	-dd-	/Raddi /	Personal name
8.	-nn-	/mannenna /	Kerosene oil
9.	-tt-	/pattu /	ten
10.	-dd-	/addeham /	he (Resp: term)
11.	-nn-	/onnu /	one
12.	-nn-	/annam /	rice
13.	-pp-	/kappal /	ship
14.	-bb-	/Rabbar /	rubber
15.	--mm-	/sammaanam /	prize
16.	-yy-	/ceyyaan /	for doing
17.	-R ^h -	/paR ^h i /	regarding
18.	-ll-	/alla /	not
19.	vv	/oovva /	Tuesday
20.	ll	/ulla /	having
21.	ss	/vayassu /	age
22.	ññ	/oanñanaasñeer1 /	Place name

=====

EXAMPLE LIST FOR WORD MEDIAL TWO CONSONANT (C1 C2) CLUSTERS

TYPE I
=====

STOP + LIQUID / CONTINUENT / FRICATIVE AS SECOND ELEMENT

/ -kr- /	/ prakriya /	'process'
/ -gr- /	/ aagraham /	desire
/ -tr- /	/ petrool /	petrol
/ -kl- /	/ caakleeRRu /	chocolate
/ -bl- /	/ pabliku /	public
/ -ky- /	/ vaakyam /	sentence
/ -khy- /	/ mukhya /	chief
/ -gy- /	/ aaroogyam /	health
/ -gy- /	/ puujyam /	cipher
/ -ty- /	/ satyam /	truth
/ -dy- /	/ aadyam /	first
/ -dhy- /	/ adhyakṣan /	president
/ -bhy- /	/ labhyam /	that which is available
/ tv /	/ tatvam /	principle
/ ks /	/ aaksiliyaRi /	axillary
/ ks /	/ bhakṣanam /	food

TYPE II
=====

<u>LIQUID + STOP / FRICATIVE / CONTINUENT : AS SECOND MEMBER</u>		
/ -rk- /	/ aavarkaḷ /	he (a/respectful term)
/ rg /	/ vargiyam /	communal
/ rgh /	/ diirgham /	long
/ rd /	/ boordu /	board
/ ry /	/ eviikaaryam /	acceptable
/ rv /	/ appurvam /	rare
/ rs /	/ vaṛṣam /	year : rain
/ r̄s /	/ vimarṣanam /	criticism
/ rh /	/ arhṇam /	deserving

/ lk /	/ ukkaṇṭa /	anxiety
/ lp /	/ alpam /	a few
/ lb /	/ ulboodhippikka /	say, to make one to understand
/ ly /	/ praabalyam /	in force
/ lv /	/ alvaar /	place name
/ ls /	/ ḷsavam /	festival
/ lh /	/ ḍelhi /	place name
lc	/ aalca /	week
ls	/ nalṣu /	nurse
ld	/ gooldu /	gold

TYPE III
=====

NASAL + STOP / CONTINUED / FRICATIVE / AS SECOND ELEMENT

/ ṭk /	/ paṭku /	share
/ ṇc /	/ aṇcu /	five
/ ṇj /	/ aṇjali /	folding hands and placing at breast
/ ṇṭ /	/ kaṇṭu /	saw
/ ṇḍ /	/ maṇḍapam /	place in front of Hindu temple.
/ ṇp /	/ eṇpatu /	eighty
/ ṇḍh /	/ baṇḍhu /	relative
/ ṇp /	/ oṇpatu /	nine
/ ṇR /	/ eṇRe /	my
/ mp /	/ sampalam /	salary
/ mb /	/ boombee /	Bombay
/ mbh /	/ sambhavam /	event
/ ṇy /	/ gaṇyam /	considerable
/ ṇy /	/ viṇyaasam /	setting up
/ my /	/ saṇmyam /	gentle
/ mv /	/ samvaraṇam /	reservation
/ mē /	/ samēayam /	doubt
/ ms /	/ samsaarikkuka /	to speak
/ m h /	/ braahmaṇan /	brahmin
/ ns /	/ ansaari /	personal name.

=====

PHONOTACTICS

The distributional relationship of the phonological elements is dealt with in this section. The units taken for analysis are single words or fused phrase units.

VOWELS :

All vowels both short and long except short vowel / o / occur word initially, Word medially and word finally. Short Vowel / o / will not occur in the word final position.

CONSONANTS :-

All Consonants except / ɳ ɳ̌ ľ / and / ľ / are capable of occurring in the word initial position. But a very few / ľ / beginning words are found in the modern language such as / looha / the dress of Christian priest. / luusi / 'personal name' etc. But their frequency is very limited. Similarly the initial occurrences of / n / and / ɳ / are also very rare.

Out of the 37 Consonants, only ^{eight} Consonants - / m n ɳ R r ľ / and / y / Can occur in the word final position. The Velar nasal / ɳ̌ / occurs only in the word medial position either with length or in Clusters. All other Consonants are Capable of occurring in the initial as well as in the medial positions.

Unlike Vowels, length Contrast for Consonants is found only in the medial position. (eg. / paɳam / 'picture' / paɳɳam / 'kite') But length is not possible with Consonants / ɳ, h, r / and / ľ /. The nasal / ɳ̌, ɳ̌̄ / and / ɳ̌̄ / occurs medially with length or in Clusters.

The word final consonants except / m / freely varies with / ɳ̌ /. When the word is monosyllabic of the pattern OVC, the final O alternates with CCu.

Eg.

kaaR	KaaRu	'Car'
kaṇ	kaṇṇu	'eye'
kal	kallu	'stone'
kaal	kaalu	'leg'
kaḷ	kaḷḷu	'today'
vaḷḷ	vaḷḷu	'sword'
avar	avaru	'they'
kay	kayyu	'hand'

=====

DISTRIBUTION OF VOWELS - INITIALLY BEFORE

CONSONANTS EXAMPLE LIST

/ a /

/ akam /	'inside'
/ akhila /	'all'
/ agrikalcar /	'agriculture'
/ aṅgam /	'member'
/ ajit Kumar /	Personal name
/ aṭi /	'foot'
/ aniyikkuka /	'to bedeck'
/ atinaal /	'because of'
/ athavaa /	'or ; otherwise'
/ addeeham /	'he (respectful term)'
/ adhikam /	'excessiveness'
/ annu /	'on that day'
/ anuvaadam /	'permission'
/ apakatam /	'accident'
/ abaddham /	'mistake'
/ abhayam /	'shelter'
/ amartuka /	'to suppress'
/ ayal /	'neighbouring'
/ ara /	'half'
/ aRivu /	'knowledge'
/ alaku /	'blade'
/ alavu /	'measurement'
/ alimati /	'corruption'
/ ava /	'they'
/ aśāstriyam /	'unscientific'
/ aśukham /	'unhealthiness'

/ aa /

/ aake /	'totally'
/ aagata /	'that which comes'

/ aaghoṣam /	'celebration'
/ aatunnu /	'to swing'
/ aadiRRooriyan /	'auditorium'
/ aani /	'nail'
/ aatma /	'of the soul'
/ aadarṣam /	'ideal'
/ aadhaaram /	'basic'
/ aana /	'elephant'
/ aapta /	'believable'
/ aaphiiṣu /	'office'
/ aabhimukhyattil /	in presence : 'under auspicious'
/ aamukham /	'preface'
/ aayiram /	'thousand'
/ aarambham /	'beginning'
/ aṣṬu /	'six'
/ aaloocana /	'thinking'
/ aalukaḷ /	'persons'
/ aalca /	'week'
/ aavaśyam /	'need'
/ aaśa /	'desire'
/ aaṣu /	'ash'
/ aaspadam /	'base' : 'support'
/ aahaaram /	'food'

/ i /

/ iṁṁane /	'this manner'
/ iṁa /	'middle part'
/ itara /	'other : alternate'
/ innale /	'yesterday'
/ inam /	'kind'
/ iprekaaram /	'this manner'
/ iratti /	'twice : double'

/ iRaṇṇi /	'landed'
/ ilakṣan /	'Election'
/ ivar /	'these persons'
/ ii /	
/ iitu /	'security'
/ illavar /	'Ezhavas' (a Caste)
/ u /	
/ ucca /	'mid-day'
/ uṭan /	'at once'
/ unarvu /	'wakefulness'
/ uttaram /	'answer'
/ udaram /	'abdomen'
/ unnayiccu /	'exposed to examination'
/ upakarikkuka /	' to become useful '
/ ummar /	' Personal name '
/ uyarnnu /	'having raised'
/ urukku /	'steel'
/ uRappiccu /	'Confirmed'
/ ulakam /	'world'
/ ulṭpete /	'inclusive'
/ uṣṇam /	'heat'
/ uu /	
/ uutṭi /	'place name'
/ uurjjitam /	'enthusiasm'
/ uuṣmalata /	'the state of hot'
/ e /	
/ ekṣeyiṇcu /	'exchange'
/ eṇciniiyaRiṇṅu /	'engineering'
/ eṭuttu /	'having taken'
/ eṇṇa /	'oil'
/ etire /	'against'

/ en <u>n</u> u /	'which day'
/ enikku /	'to me'
/ eppool /	'when'
/ el <u>l</u> uti /	'wrote'
/ evi <u>t</u> e /	'where'
/ ee /	
/ eekam /	'single'
/ eejanRu /	'agent'
/ eerppa <u>t</u> u /	'arrangement'
/ eeRRavum /	'too much'
/ ee <u>p</u> ppic <u>o</u> u /	'entrusted'
/ ee <u>l</u> u /	'seven'
/ eevar /	'which persons'
/ o /	
/ okke /	'all'
/ o <u>t</u> i <u>n</u> n <u>u</u> /	'broke'
/ ottu /	'joined'
/ on <u>n</u> u /	'one'
/ onpatu /	'nine'
/ oppu /	'signature'
/ ore <u>e</u> /	'same'
/ oRRa /	'one'
/ o <u>l</u> i <u>n</u> n <u>u</u> /	'having vacated'
/ oo /	
/ oo <u>t</u> i /	'rain'
/ oophi <u>s</u> u /	'office'
/ oo <u>n</u> e <u>e</u> l <u>s</u> u /	'honours'
/ oo <u>y</u> il /	'oil'
/ oo <u>r</u> ttu /	'remembered'
/ oo <u>v</u> arsiyar /	'overseer'
/ au /	
/ au <u>n</u> su /	'ounce'
/ au <u>d</u> yoogika /	'official'
/ au <u>k</u> ri <u>s</u> tyam /	'excellency'
/ au <u>s</u> adham /	'medicine'

D I S T R I B U T I O N O F C O N S O N A N T S

(a) INITIALLY BEFORE VOWELS

	a	aa	i	ii	u	uu	e	ee	ai	o	oo	au
k	x	x	x	x	x	x	x	x	x	x	x	x
kh	x	x										
g	x	x	x		x			x			x	x
gh	x										x	
h												
c	x	x	x	x	x	x	x	x		x	x	
ch												
j	x	x	x	x	x	x						
jh												
n̄	x	x										
t	x	x	x	x			x		x			
th												
d	x	x	x	x			x		x		x	
dh	x	x		x		x						
n̄	x	x	x	x		x	x	x			x	
n	x	x	x				x		x		x	
p	x	x	x	x	x	x	x	x	x	x	x	x
ph	x	x	x	x	x		x				x	
b	x	x	x	x	x		x	x		x	x	
bg	x	x	x	x		x		x			x	
m	x	x	x	x	x	x	x	x	x	x	x	x
y	x	x			x	x						
r	x	x		x		x		x			x	
R	x	x	x	x				x			x	
l	x	x	x	x			x	x	x		x	
l̄												
l̄												
v	x	x	x	x			x	x	x		x	
s	x	x	x	x	x		x	x			x	
sg	x	x	x		x							
g	x	x	x	x	x	x	x	x	x		x	x
h	x	x	x				x		x		x	x

EXAMPLE LIST FOR DISTRIBUTION OF CONSONANTS

INITIALLY BEFORE VOWELS.

/ k- /

-a	katal	sea
-aa	kaatu	forest
-i	kitt _i	obtained
-ii	kiil _i il	bottom
-u	kutt _i	child
-uu	kuut _i	increased
-e	kett _i	tied
-ee	keett _i u	hard
-ai	kai	hand
-o	kotuttu	gave
-oo	koot _i	crore
-au	kausaalam	talent

/ kh /

-a	khananam	mining
-aa	khaadi	khadi

/ g /

-a	gati	way
-aa	gaanam	song
-u	guhya	secret
-ee	geelsu	girls
-oo	goopaalan	Personal name
-au	gauravam	Seriousness

/ gh /

a	ghatikearam	clock
-oo	ghoosam	ceremonies

/ o /

-a	caritram	history
-aa	caaram	spy
-i	ci ri	laughter

ii	ciittu	playing cards
u	ou ^u RRi	turned : rounded
-uu	ouutu	heat
-e	ceyta	did - <i>wich</i>
-ee	ceerttu	made joined
-o	co ^o lli	spoke : said
-oo	coodyam	question
	/ j /	
-a	jal ^a am	water
-aa	jaati	caste
-i	jilla	district
-ii	jiiivikk ^u nu	is living
-u	judi ^u yal	judicial
-uu	juun ^u	june
-oo	jooli	work : job
	/ n̄ /	
-a	n̄a ^{n̄} ñal	we
-aa	n̄aan	I
	/ t̄ /	
-a	tan ^a	ton
-aa	taak ^a su	tax
-i	tikka ⁱ RRu	ticket
-ii	ti ⁱ ti	tea
-e	teknikk ^e al	technical
-ai	taippi ^a isRRu	typist
	/ d̄ /	
-a	day ^a al	dayal
-aa	daakt ^a ar	doctor
-i	digri	degree
-ii	diisal	desal
-e	depoosi ^e RRu	deposit
-u ^u ai	daiveel ^u siphaidu ^u	deversified
-oo	doonboock ^o koo	name of an institution

/ t /

-a	tati	timber
-aa	taan	oneself
-i	tiriccu	started
-ii	tii	fire
-u	tuni	cloth
-uu	tuukki	weighed
-e	teR ^h u	mistake
-ee	teeti	in search of
-o	tottu	touched
-oo	toottam	estate

/ d /

-a	da ^h am	ten
-aa	daanam	gift
-i	divasam	day
-ii	diirgha	long
-u	dulkhita	sad
-uu	duuram	distance
-ee	deeham	body
-ai	daivam	God
-oo	doosam	badness
-au	daurbhaag ^h akaram	unfortunate

/ dh /

-a	dhanam	wealth
-aa	dhaatu	mineral
-ii	dhiiram	bold
-uu	dhuurttu	lavishness

/ n /

-a	ṇayam	policy
-aa	ṇaam	we
-i	ṇila	position

-ii	<u>ni</u> ikki	removed
-uu	<u>nu</u> u	thread
-e	<u>ne</u> duma <u>ni</u> adu	Place name
-ee	<u>ne</u> eti	achieved
-oo	<u>no</u> okki	looked

/ n /

-a	<u>na</u> isu	nurse
-aa	<u>naa</u> ga <u>na</u> la <u>is</u>	nationalize
-i	<u>ni</u> moon <u>i</u> ya	pneumonia
-e	ne <u>h</u> ru	Nehru Nehru (personal Name)
-ai	<u>na</u> iloon	nailon
-oo	<u>no</u> o <u>tt</u> i <u>is</u>	notice

/ p /

-a	<u>pa</u> oca	green
-aa	<u>pa</u> atram	vesse
-i	<u>pi</u> ti	handle
-ii	<u>pi</u> di <u>ya</u> atrik	pediatric
-u	<u>pu</u> tran	son
-uu	<u>pu</u> uja	worship
-e	<u>pe</u> n	woman
-ee	<u>pe</u> eru	name
ai	<u>pa</u> isa	paisa (coin)
-o	<u>po</u> tu	common
-oo	<u>po</u> oyi	went
-au	<u>pa</u> uran	citizen.

/ ph /

-a	<u>ph</u> alam	result
-aa	<u>phaa</u> Ram	form
-i	<u>ph</u> ilim	film
-ii	<u>ph</u> i <u>is</u>	fees
-u	<u>ph</u> ul	full
-e	<u>pheda</u> Ree <u>sa</u> m	From Federation
-oo	<u>pho</u> ne	phone

/ b /

-a	bandhu	relative
-aa	baalan	boy
-i	birudam	degree
-ii	biiccu	beach
-u	budhan	wednesday
-e	beñch	bench
-ee	beesiku	basio
-o	bokkaaRo	Place name
-oo	boodham	conscienceness

/ bh /

-a	bhaṛaṇam	reign
-aa	bhaaram	weight
-i	bhitti	wall
-ii	bhiimam	gigantic
-uu	bhuumi	earth, land
-ee	bheedam	change
-oo	bhooloonaath paṣvaan	Personal name

/ m /

-a	makan	son
-aa	maasam	month
-i	mitram	ally
-ii	miiRRar	metre
-u	mutal	from
-uu	muḥla	corner
-e	meccam	better
-ee	meekhala	zone
-ai	maitaanam	maidan
-o	mottam	total
-oo	mooṣam	bad
-au	maunam	silence

	/ y /	
-a	yantram	machine
-aa	yaatra	journey
-u	yugathil	in the era
-uu	yuuniḡan	union
-oo	yoogam	meeting

	/ r /	
-a	rantu	two
-aa	raatri	night
-ii	riiti	pattern
-uu	ruupa	rupee
-ee	reekha	document
-oo	roogam	disease

	/ R /	
-a	Rabbar	rubber
-aa	Raattu	wheel
ai	Risarcou	Research
-ii	Riittu	wreath
-ee	Reesan	ration
-oo	Roodu	road

	/ l /	
-a	lakkam	number
-aa	laabhakaram	profitable
-i	lisRku	list
-ii	liigu	league
-e	leyttu	leyth
-ee	leelam	action
-ai	laiḡgikam	sexual
-oo	lookam	world

	/ v /	
-a	vaka	item
-aa	vaasai	bought

-i	vila	price
-e	vella	white
-ee	veeRe	another
ai	vaidyuti	electricity
oo	vo _o libaal _o	vollyball

/ s /

-a	s̄akti	strength
-aa	s̄aakha	branch
-i	s̄ila	stone
-ii	s̄iitam	coldness
-u	s̄upaars̄a	recommendation
-e	s̄entilkumaar	personal name
ee	s̄eegi	ability
oo	s̄oocaniiyam	deplorable

/ s̄ /

-a	s̄ayar	share
-aa	s̄aappu	shop
-i	s̄ippuyaa _o rd _u	ship-yard
-u	s̄un _o nee _o	personal name
-oo	s̄ooppu _o	shop

/ s /

-a	satyam	truth
-aa	s̄aahityam	literature
-i	sinima	Cinema
-ii	s̄iita	personal name
-u	sukham	comfortness
-uu	s̄uuk̄s̄icou	with care
-e	senR̄ar	centre
-ee	seevanam	service
-ai	sain	name of a theatre
-oo	s̄ooppu	soap
-au	s̄auk̄aryam	convenience

/ h /

-a	hanikkuka	to kill
-aa	h/kaani	trouble
-i	hindi	Hindi language
-e	hevi	heavy
-ai	haiway	highway
-oo	hoottal _{००}	hotel
-au	hausiṅgu	housing

=====

MEDIANALLY BEFORE VOWELS

	a	aa	i	ii	u	uu	e	ee	ai	o	oo	au
k	x	x	x	x	x	x	x	x				
kh	x	x	x									
g	x		x	x	x							
gh		x									x	
ṭ	x	x	x		x			x			x	
c	x	x	x	x	x			x				
ch	x											
j	x	x	x	x	x							
jh												
n̄	x	x	x		x		x				x	
ṭ	x	x	x		x	x	x	x			x	
tḥ	x		x									
ḍ	x		x		x		x					
dḥ	x											
n̄	x	x	x		x	x		x			x	
tn̄	x	x	x	x	x	x	x	x			x	
d	x	x	x					x				
dh	x	x	x	x	x				x			
n̄	x	x	x		x			x			x	
n	x	x	x	x	x	x	x	x			x	x
p	x	x	x	x	x	x	x	x			x	
ph	x		x	x								
b	x		x								x	
bg	x	x	x		x						x	
m	x	x	x	x	x	x		x			x	
y	x	x	x		x						x	
r	x	x	x	x		x	x	x			x	
R	x	x	x		x		x				x	
l	x	x	x	x	x	x	x				x	x
ḷ	x	x	x	x	x	x	x	x	x		x	
lv̄	x	x	x	x	x			x			x	
s̄	x	x	x	x				x			x	
s̄	x	x	x		x	x	x	x				
sh	x	x	x	x	x	x					x	

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DISTRIBUTION OF CONSONANTS

a

MEDIALY BEFORE VOWELS

EXAMPLE LIST

	/ k /	
a	/ akam /	inside
aa	/ pookaan /	to go
i	/ pratyeeekiocu /	especially
ii	/ vakkil /	advocate
u	/ aakum /	will become
uu	/ anukuulam /	favourable
e	/ aake /	totally
ee	/ aakeenta /	that which has to become
	/ kh /	
a	/ meekhala /	zone
aa	/ sakhaakkal /	Comrades
i	/ akhila /	all
	/ g /	
a	/ avaganana /	disregard
aa	/ roogikal /	patient
ii	/ sanggitam /	music
u	/ anugunam /	consonant
	/ gh /	
aa	/ udghaatanam /	inauguration
oo	/ saghoosam /	festival
	/ n̄ /	
a	/ annane /	that manner
aa	/ tutaannan /	for beginning
u	/ tutaannuka /	beginning
i	/ tutaanni /	began
ee	/ innaaneenta /	to be descended
nn oo	/ innoottu /	to this direction

	/ o /	
a	/aalooocana/	thinging
aa	/upacaaram /	formality
i	/aalooocicou /	thought
ii	/ maracciini /	taploca
u	/ tikaccum ꣳ	wholly
ee	/ matṭaamceeri /	place name
	/ Oh /	
a	/ tuccham /	very little
	/ j /	
a	/vijayam /	success
aa	/ raaṭṭaavu /	King
i	/ alarṭi /	allergi
ii	/ saṭṭiivam /	energetic
u	/taaṭṭuddiin /	personal name
	/ n̄ /	
a	/ paṇṇam /	famine
aa	/ iriṇṇaalaṭṭakṭa /	place name
i	/ paṇṇi /	cotton
u	/ paṆaṇṇu /	said
uu	/ aṇṇuuRu /	five hundred
oo	/ PaṆaṇṇoo /	said or ?
	/ ṭ /	
a	/ aṭacou /	closed
aa	/ viṭaan /	to release
i	/ piṭi /	handle
u	/ aṭutta /	near
uu	/ veṭṭuur /	place name
e	/ kuṭe /	with
ee	/ paṭee /	wholly
oo	/ moṭṭoor /	motor

	/ th /	
a	/ paatham /	lesson
h	/ pathiocu /	that which learnt
	/ d /	
a	/ prasidanRu /	President
i	/ medisn /	medicine
u	/ alingu /	ALIND
e	/ moodeen /	modern
	/ dh /	
a	/ drugham /	firm
	/ na /	
a	/ panam /	money
aa	/ kaanaan /	to see
i	/ pani /	work
u	/ kaanum /	will see
uu	/ mannuur /	place name
ee	/ kaaneenta /	to be seen
oo	/ aanoo /	is (it) so ?
	/ t /	
a	/ pata /	foam
aa	/ pataaka /	flag
h	/ mati /	enough
ii	/ atitam /	beyond
u	/ putuma /	newness
uu	/ kunttuur /	place name
e	/ pookate /	without going
ee	/ atee /	same
oo	/ atootu /	with it

	/ th /	
a	/ katha /	story
i	/ dusthiki /	bad state
	/ d /	
a	/ udaram /	stomach
aa	/ udaaharanam /	example
i	/ ulpaadippikka /	to make
ee	/ uddeesam /	aim
	/ dh /	
a	/ uddhariccu /	lifted
aa	/ sadhaaram /	dependence
i	/ <u>ni</u> dhi /	asset
ii	/ sadhiiram /	boldly
u	/ madhu /	personal name
ai	/ sadhairyam /	with bravery
	/ <u>n</u> /	
a	/ <u>inn</u> ale /	yesterday
aa	/ <u>enna</u> al /	but
i	/ <u>enn</u> ittum /	even though
u	/ <u>annu</u> /	on that day
ee	/ <u>annee</u> /	from that day onwards (emph
oo	/ <u>innoo</u> /	to day?
	/ n /	
a	/ manassil /	in mind
aa	/ pinnaakkam /	back word
i	/ ini /	hereafter
ii	/ anitti /	in justice
u	/ manugyan /	man
uu	/ <u>na</u> anuuRu /	four hundred
e	/ <u>uta</u> ne /	atonce
ee	/ <u>it</u> tivineeyum /	decreased and

oo	/ manoobhaavam /	attitude
au	/ anaudyoogika /	non-official
	/ p /	
a	/ vipananam /	selling
aa	/ apaakata /	immatively
i	/ goopi /	Personal name
ii	/ ruupiikamikkuka /	forming
u	/ uppu /	salt
uu	/ apuurvam /	rare
e	/ eerppettu /	engaged
ee	/ apeekaa /	application
oo	/ appool /	at that time
	/ ph /	
a	/ viphalam /	unfruitful
i	/ kaaphi /	coffee
ii	/ aaphiiru /	Office
	/ b /	
a	/ abadham /	error
i	/ kutumbi /	a Caste
oo	/ ulboodhippiccu /	said
	/ bh /	
a	/ abhayam /	shelter
aa	/ abhaavam /	the state that which is not
i	/ abhipraayam /	opinion
u	/ albhutam /	wonder
oo	/ upabhoogam /	enjoyment
	/ m /	
a	/ caramam /	death
aa	/ tiirumaaniccu /	determined
i	/ niyamiecu /	appointed
ii	/ samiiipiccu /	approached
u	/ sanudram /	Sea

uu	/ amuulyam /	in valuable
ee	/ sammeelanam /	meeting
oo	/ labhikkumoo /	Whether (it) will get or
	/ y /	
a	/ vijayam /	success
aa	/ pooyaal /	if went
i	/ pooyi /	went
u	/ avayute /	of them
oo	/ viniyoogiccu /	sent
	/ r /	
a	/karam/	tax
aa	/ paraati /	complaint
i	/ piri /	twist
ii	/ pariikṣa /	examination
u	/ 'guru /	great
uu	/ duruham /	dis belief
e	/ peere /	persons
ee	/ pareeta /	the woman who died
oo	/ puroogati /	Progress
	/ R /	
a	/ maRa /	screen
aa	/ maaRaate /	without moving
i	/ ṛeRi /	ascended
ṛi y	/ maRupaṭi /	reply
uu	/ kuRuur /	house name
e	/ kuRe /	some
oo	/ aaRṚoomik /	atomic
	/ l /	
a	/ kala /	art
aa	/ vilaapam /	weeping
i	/ paaliccū /	protected

ii	/ kuliina /	noble
u	/ naalum /	four and
uu	/ aluuminiam /	aluminium
e	/ i <u>nn</u> ale /	yesterday
oo	/ aloocana /	thinging
	/ <u>l</u> /	
a	/ va <u>l</u> artti /	nurtured
aa	/ ko <u>l</u> laan /	to absorb
i	/ ka <u>l</u> i /	play
ii	/ <u>na</u> aliikeeram /	Coconut
u	/ ka <u>l</u> lu /	toddy
uu	/ glu <u>u</u> kkosu /	glucose
e	/ <u>na</u> ale /	tomorrow
ee	/ ko <u>o</u> leeju /	College
ai	/ pla <u>i</u> vuddu /	Plywood
oo	/ blo <u>o</u> kku /	block
au	/ bla <u>u</u> su /	blouse
	/ <u>l</u> /	
a	/ ma <u>l</u> a /	rain
aa	/ vii <u>l</u> aan /	to fall down
i	/ o <u>l</u> i <u>nn</u> u /	become vacant
u	/ el <u>u</u> ti /	wrote
oo	/ ta <u>a</u> loo <u>tt</u> u /	to the bottom
	/ v /	
a	/ a <u>v</u> a /	they
aa	/ u <u>l</u> aveakkum /	will inculcate
i	/ ma <u>R</u> avi /	forgetfulness
ii	/ dvi <u>i</u> pu /	island
u	/ ku <u>R</u> avu /	defect
ee	/ a <u>v</u> eesam /	spirit : certainty

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/ ṣ /

a	/ vaṣam /	side
aa	/ aaṣaan /	teacher
i	/ vaaṣi /	abstinacy
ii	/ naṣiikaraṇam /	spoiling
u	/ kaasu /	money
ee	/ niṣṣeṣam /	wholly
oo	/ paṣṣoodhana /	examination

/ ṣ /

a	/ viṣayam /	subject
aa	/ viṣaadam /	gen ^{cy} ence
i	/ maṣi /	ink
u	/ viṣu /	an important day for Hindus
e	/ paṣe /	perhaps
ee	/ kṣeetram /	temple

/ ṣ /

a	/ avasaram /	opportunity
aa	/ avasaanam /	end
i	/ Prasidham /	famous
ii	/ aṣim /	Personal name
u	/ asukham /	illness
uu	/ aṣutrahnam /	planing

/ h /

a	/ saha ^h jam /	natural
aa	/ maha ^h an /	great man
i	/ daahik ^h ka /	to become thirst ^y
oo	/ sahoodaran /	brother.

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DISTRIBUTION OF

CONSONANTS

MEDIANALLY AFTER VOWELS

[illegible]

D I S T R I B U T I O N O F C O N S O N A N T S

E X A M P L E L I S T

/ -k- /

a-	akam	inside
aa-	aake	totally
i-	aṭikal	blows
ii-	aiikariccu	accepted
u-	anukuulam	favourable
uu-	muukam	silent
ee-	eeka	single : one
ai-	vaikumneeram	in the evening
oo-	lookam	world
au-	asaukaryam	in convenience

/ kh /

aa	saakha	branch
u	asukham	illness
ee	reekha	document

/ g /

a-	avaganana	dis regarding
aa-	avaagatam	welcome
i	pariganana	consideration
ii	liigu	League
u	anugunam	consonant
oo	roogam	illness
ee	veegam	soon

/ gh /

aa	aaghoogam	festival
ii	aiighram	quickly

/ ṭ /

a	aṭṭane	that manner
aa	vaṭṭi	bought
i	iṭṭu	here : to this place
ii	niṭṭaap	to move

u	കുഞ്ഞു	children
e	കുഞ്ഞു	how
ee	കുഞ്ഞു	coconut
	/ c /	
a	കുഞ്ഞു	sent which
aa	കുഞ്ഞു	customs
i	കുഞ്ഞു	acquaintance
ii	കുഞ്ഞു	beach
u	കുഞ്ഞു	mid-noon
ee	കുഞ്ഞു	discretion
	/ j /	
aa-	കുഞ്ഞു	resignation
i-	കുഞ്ഞു	succesded
uu-	കുഞ്ഞു	worship
ee-	കുഞ്ഞു	in the page
o-	കുഞ്ഞു	biology
oo	കുഞ്ഞു	concord
au	കുഞ്ഞു	free
	/ n /	
a	കുഞ്ഞു	yellow
i	കുഞ്ഞു	place name
	/ t /	
a	കുഞ്ഞു	closed
aa	കുഞ്ഞു	wholly
i	കുഞ്ഞു	handle
ii	കുഞ്ഞു	house
u	കുഞ്ഞു	investment
uu	കുഞ്ഞു	increased
e	കുഞ്ഞു	without involving
ee	കുഞ്ഞു	gained
o	കുഞ്ഞു	become powered
oo	കുഞ്ഞു	court of law

51. 1475 3170 3170 3170

/ th /

a	pathikkuka	learning
aa	paatham	lesson

/ d /

a	adiganal	additional
aa	aadIRRu	audit
i	prasidaRu	President
ii	miidiyam	medium
u	phudu	food
uu	pruudansi	prudancy
e	medisin	medicine
ee	Reediyoo	radio
oo	moodal	model

/ dh /

u	drudham	firm
---	---------	------

/ n /

a	panam	money
aa	kaanaaa	to see
i	daksina	south
ii	viinu	fell down
u	gunam	quality
uu	balakuninRe	of the balloon
e	pennu	woman
ee	veenta	not needed
o	tontu	husk
oo	phoonil	through the telephone
au	anunail	council

	/ t /	
a	pata	foam
aa	paraati	complaint
i	mitam	normal
ii	aniti	injustice
u	putuma	newness
uu	muutta	elder
e	metikkuka	thrusting
ee	neetaavu	leader
o	potu	public : common
oo	tootu	rate
	/ th /	
a	athavaa	or : if not
	/ d /	
a	padyam	poetry
aa	ulpaadanam	production
i	daaridryam	poverty
oo	oodiccu	asked
au	audyoogika	official
	/ dh /	
a	avadhi	leave
aa	aadhaaram	basic
i	nidhi	treasure
oo	boodham	conscienceness
	/ n /	
a	annu	on that day
i	innu	on this day : to day
u	irunnu	sat
e	ennu	on which day
o	onnu	one
	/ n /	
a	manassu	mind
aa	haani	defect
i	minaRal	mineral
ii	minam	a month (ME)
u	munpu	front

	/ p /	
a	/ apak ^o atam /	accident
aa	/ aapattu /	danger
i	/ vipananam /	selling
ii	p tiipp ^o etti /	matches
u	/ upaayam /	trick
uu	/ ruupiikarikka /	forming
e	/ eppool /	when
o	/ oppu /	signature
oo	/ goopi /	Personal name
	/ ph /	
aa	/ aaphiisu /	Office
	/ b /	
a	/ abaddham /	mistake
	/ bh /	
a	/ abhayam /	shelter
aa	/aabharanam /	ornaments
	/ m /	
a	/ caramam /	death
aa	/ saamaanam /	articles
i	/ sinima /	Cinema
ii	/ bhiimam /	gigantic
u	/ putuma /	newness
uu	/ uuma /	dumb one
e	/ Cempu /	Copper
o	/ ompatu /	nine
oo	/boom ^o bay /	Place name
au	/maum ^o aaram /	adulthood
	/ y /	
a	/ vijayam /	success
aa	/ aayi /	became
i	/ viniyoogicu /	spent
ii	/ tiiyum /	fire-and
u	/ uyarnnu /	raised

oo	/ pooyi /	went
	/ r /	
a-	/ karam /	tax
aa	/ kaaranam /	reason
i	/ piri /	twist
ii	/ tiirum /	will end
u	/ kuru /	seed
yu	/ kuura /	roof
ee	/ keeralam /	Kerala state
oo	/ pooraan /	for coming
au	/ pauran /	citizen
	/ R /	
a	/ maRa /	screen
aa	/ maRaana /	for moving
i	/ CiRi /	lips
ii	/ iIRa /	boomhu
u	/ kuRe /	come
ee	/ eeEi /	azended
o	/ oRRa /	single
oo	/ ooRma /	rememberence
	/ l /	
a	/ kala /	art
aa	/ naalu /	four
i	/ illa /	not
u	/ ula /	furnace
uu	/ kuuli /	Cooli
e	/ celluka /	to go to makian
ee	/ lelam /	action
o	/ olluur /	place name
	/ l /	
a	/ kala /	weed
aa	/ kaala /	ox

i	/i _o laya /	younger
ii	/ ni _o ilam /	length
u	/ ulli _o l /	inside
	/ <u>l</u> /	
a	/ma _o la /	rain
aa	/aa _o la/	week
i	/ ilayuka /	to crawl
ii	/ vii _o lum /	will full down and
oo	/ koo _o la /	bribery
	/ <u>s</u> /	
a	/ va _o sam /	side
aa	/ aa _o sa /	desire
i	/ ni _o sa /	night
ii	/ ii _o svaran /	God
ee	/ kee _o savan /	personal name
ai	/ sai _o savam	infancy
oo	/ moo _o sam /	bad
au	/ kau _o salam /	trick
	/ <u>s</u> /	
a	/ ma _o si /	ink
i	/ vi _o sayam /	subject
u	/ ku _o san /	oushion
uu	/ uu _o malata /	the state having heat
au	/ au _o sadham/	drug
	/ <u>s</u> /	
a	avasaram /	oppertunity
aa	/ sva _o asam /	breath
ii	/ phi _o isu /	fees
u	/ su _o sadhyam /	easy to come to hand
oo	/ po _o sRRal /	postal

- 99 -

/ v /

a	/ avasaram /	opportunity
aa	/ bhaavi /	future
i	/ .divasam /	day
u	/ ouvar /	well
e	/evite / °	where
ee	/ eever /	which people ?
ai	/ praiveR ^h u /	private
oo	/ proovidanRu / °	provident

/ h /

a	/ sahajam /	inborn:national
aa	/ aahaar ^a ram /	food
oo	/ mooham /	desire

=====

二、三、四、五、六、七、八、九、十、十一、十二、十三、十四、十五、十六、十七、十八、十九、二十、二十一、二十二、二十三、二十四、二十五、二十六、二十七、二十八、二十九、三十、三十一、三十二、三十三、三十四、三十五、三十六、三十七、三十八、三十九、四十、四十一、四十二、四十三、四十四、四十五、四十六、四十七、四十八、四十九、五十、五十一、五十二、五十三、五十四、五十五、五十六、五十七、五十八、五十九、六十、六十一、六十二、六十三、六十四、六十五、六十六、六十七、六十八、六十九、七十、七十一、七十二、七十三、七十四、七十五、七十六、七十七、七十八、七十九、八十、八十一、八十二、八十三、八十四、八十五、八十六、八十七、八十八、八十九、九十、九十一、九十二、九十三、九十四、九十五、九十六、九十七、九十八、九十九、一百

T E N A T T E A B O U T F O U R T S

	/ 1 /	
a	/ pal /	tooth
aa	/ paal p /	milk
i	/ peeril /	in name
ii	/ vakkiil /	advocate
uu	/ nuul /	thread
e .	/ nel /	paddy
ee	/ meel /	above
ai	/ mail /	mile
oo	/ tool /	skin
	/ 1 /	
a	/ aval /	she
aa	/ naal /	day
i	/ kavil /	check
uu	/ curul /	roll
uu	/ skuul /	school
ee	/ teel /	scorpion
	/ y /	
e	/ ney /	ghee

=====